



Attorney Docket No. 0670-0239

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Kenichi SHIRAISHI

Serial No. 09/554,695

Filed: May 18, 2000

For: RECEIVER

) Group Art Unit: 2631

) Examiner: E. Bayard

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Adrian M. Stamps

RESPONSE

Honorable Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Official Action mailed August 3, 2004, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant again notes the partial consideration of the Information Disclosure Statement filed on May 18, 2000. Specifically, it appears that the Examiner inadvertently overlooked the citation of the International Search Report in the "Other Documents" section of the Form PTO-1449. It is noted that the English translation of above-referenced document is captioned "International Preliminary Examination Report." As a courtesy to the Examiner, the Applicants have attached a Form PTO-1449 including the International Preliminary Examination Report. The Applicant respectfully requests that the Examiner provide an initialed copy of the Form PTO-1449 evidencing consideration of the International Search Report.

Claims 1 and 2 are pending in the present application, both of which are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 3 of the Official Action rejects claims 1 and 2 as obvious based on the combination of U.S. Patent No. 6,023,491 to Saka et al., U.S. Patent No. 6,334,203 to Inagawa and U.S. Patent No. 6,310,863 to Yamamoto. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. In pertinent part, independent claims 1 and 2 recite correcting a phase of carriers using phase error data corresponding to demodulated I and Q symbol stream data after absolute phasing output from an inverse phase rotation

means. These features are shown, for example, in Figure 1 as a route extending from remapper (7) through the phase error table (13) to the local oscillator VCO (11). Saka, Inagawa and Yamamoto, either alone or in combination, do not teach or suggest at least the above-referenced features of the present invention.

The Official Action concedes that "Saka and Inagawa in combination does not teach an inverse phase rotation means for inversely [rotating] a phase" (page 3, Paper No. 13). Despite the assertion to the contrary in the Official Action, Yamamoto does not cure the deficiencies in Saka and Inagawa.

Yamamoto does not teach or suggest any component that can perform the same operation as the inverse phase rotation means of the present invention. The inverse phase rotation means of the present invention operates to continuously adjust the angle of rotation of the phase (on the symbol constellation) of the symbol data in order to perform absolute phasing on the phase of the demodulated symbol data (i.e., to cause the reception signal points to be identical with those on the transmission side). The uniqueness of the present invention resides in that "the phase of the carriers is corrected using the phase error data corresponding to demodulated I and Q symbol stream data (I'(8), Q'(8)) after absolute phasing outputted from the inverse phase rotation means (7), as clearly recited in claims 1 and 2.

By contrast, Yamamoto only discloses means for reversing the direction (positive or negative) of rotation of the phase of the base-band reception signal. Moreover, Yamamoto does not recognize the technical concept of absolute phasing used in the present invention. Yamamoto fails to disclose or suggest any element having the function and operation of the claimed "inverse phase rotation means." As noted above, the Official Action concedes that Saka and Inagawa do not teach an inverse phase rotation means for inversely rotating a phase, and as shown above Yamamoto also does not teach or suggest this feature. Therefore, Saka, Inagawa and Yamamoto, either alone or in combination, do not teach or suggest correcting a phase of carriers

using phase error data corresponding to demodulated I and Q symbol stream data after absolute phasing output from an inverse phase rotation means.

Since Saka, Inagawa and Yamamoto do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Furthermore, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Saka, Inagawa and Yamamoto or to combine reference teachings to achieve the claimed invention. MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the features of the present invention.

The Official Action concedes that "Saka does not teach a plurality of different modulations (QSPK, 8PSK, BPSK)" (page 2, Paper No. 13). The Official Action relies on Inagawa to allegedly teach "a plurality of different modulations (QSPK, 8PSK, BPSK) (see col. 2, lines 1-15)" (*Id.*). The Official Action asserts that it "would have been obvious to incorporate the teaching of Inagawa into Saka as to for [sic] signal demodulating device could reproduce a high quality and low quality image data from the modulated signals of 8PSK and QPSK as taught by Inagawa (see col. 2, lines 1-15)" (page 3, *Id.*). Also, as noted above, the Official Action concedes that "Saka and Inagawa in combination does not teach an inverse phase rotation means for inversely [rotating] a phase" (*Id.*). The Official Action relies on Yamamoto to allegedly teach "a phase rotation for inversely [rotating] a phase thereby performing absolute phasing (see col. 6, lines 58-67 and col. 7, lines 51-55)" (*Id.*). The Official Action asserts that it "would have been obvious to one of ordinary skill in the art to implement the teaching of Yamamoto into Saka and Inagawa as to to [sic] return the direction of rotation of the

phase to its original direction as taught by Yamamoto (see col. 7, lines 55-57)” (Id.). The Applicants respectfully disagree and traverse the above assertions in the Official Action.

There is no showing in Inagawa that teaches or suggests that a device such as Saka, which does not employ a plurality of modulations, could or should be modified by incorporating the teaching of Inagawa into Saka. Specifically, it is unclear how or why the alleged motivation in Inagawa, i.e. the “device could reproduce a high quality and low quality image data from the modulated signals of 8PSK and QPSK,” is relevant to the allegedly obvious modification to Saka, which would appear to involve changing Saka from a device lacking a plurality of different modulations into a device having a plurality of different modulations. Also, there is no showing in Yamamoto that teaches or suggests that a device such as the alleged combination of Saka and Inagawa, which does not employ an inverse phase rotation means, could or should be modified by incorporating the teaching of Yamamoto into Saka and Inagawa. Specifically, it is unclear how or why the alleged motivation in Yamamoto, i.e. “to return the direction of rotation of the phase to its original direction,” is relevant to the suggested modification to Saka and Inagawa, which would appear to involve adding an inverse phase rotation means to Saka and Inagawa.

In other words, it appears that Inagawa and Yamamoto only fragmentarily teach that “BPSK, QPSK and 8PSK modulated signals are transmitted in a time division” and that “the direction of rotation of the phase of digital orthogonal base-band reception signals is reversed,” respectively.

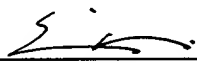
Still further, as noted above, Saka, Inagawa and Yamamoto, either alone or in combination, do not teach or suggest an inverse phase rotation means. The Official Action has not shown that the prior art teaches or suggests how or why one of ordinary skill in the art at the time of the invention would have been motivated to modify the combination of Saka, Inagawa and Yamamoto to include an inverse phase rotation means.

In the present application, it is respectfully submitted that the prior art of record, alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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